

## CLAIMS

Claims 1-16 (Cancelled)

17. (Currently Amended) A synchronization pulse detector, comprising:

a shape detector for processing samples of an input signal having a synchronization pulse and a plurality of non-synchronization pulses to determine whether such samples have a predetermined sequence;

said predetermined sequence being a first, non-time varying portion, followed by a first, time-varying portion, followed by a second, non-time varying portion, followed by a second, time-varying portion, followed by a third, non-time varying portion, one of the first and second, time-varying portions having a positive slope and the other one of the first and second, time-varying portions having a negative slope;

wherein the slope of the time varying portions are determined by comparing said input signal to a specified criterion based in part of the various slope requirements for the time varying portions

a time window for determining whether said samples are produced at a predetermined rate expected for the series of synchronization pulses; and

a voltage window for determining whether the average value of one of said second time-varying portions is substantially lower or the same as, but higher than the lower DC value detected within the time-equivalent of a segment of video.

18. (Previously Presented) The detector as claimed in claim 17, wherein said shape detector produces a pulse when said predetermined sequence is detected.

19. (Currently Amended) A synchronization pulse detector, comprising:

2 a shape detector for processing samples of an input signal having a series of  
3 synchronization pulses and a plurality of non-synchronization pulses to determine whether such  
4 samples have a predetermined sequence;  
5 said predetermined sequence being a first, non-time varying portion, followed by a first,  
6 time-varying portion, followed by a second, non-time varying portion, followed by a second,  
7 time-varying portion, followed by a third, non-time varying portion, one of the first and second,  
8 time-varying portions having a positive slope and the other one of the first and second, time-  
9 varying portions having a negative slope, wherein the slope of the time varying portions are  
10 determined by comparing said input signal to a specified criterion based in part of the various  
11 slope requirements for the time varying portions;  
12 said shape detector producing a shape detection pulse each time said predetermined  
13 sequence is detected; and  
14 a time window for determining whether said shape detection pulse is produced at a  
15 predetermined rate expected for the series of synchronization pulses; and  
16 a voltage window for determining whether the average value of one of said second time-  
17 varying portions is substantially lower or the same as, but higher than the lower DC value  
18 detected within the time-equivalent of a segment of video; and  
19 an evaluator responsive to the produced shape pulse detection pulses for determining  
20 whether such shape detection pulses are produced at a predetermined rate expected for the series  
21 of synchronization pulses.

1 20. (Currently Amended) A synchronization pulse detector, comprising:

2 a shape detector for processing samples of an input signal having a series of  
3 synchronization pulses and a plurality of non-synchronization pulses, each one of said

4 synchronization pulses preceding a segment of the input signal having non-synchronization  
5 pulses, to determine whether such samples have a predetermined sequence;

6 said predetermined sequence being a first, non-time varying portion, followed by a first,  
7 time-varying portion, followed by a second, non-time varying portion, followed by a second,  
8 time-varying portion, followed by a third, non-time varying portion, one of the first and second,  
9 time-varying portions having a positive slope and the other one of the first and second, time-  
10 varying portions having a negative slope, wherein the slope of the time varying portions are  
11 determined by comparing said input signal to a specified criterion based in part of the various  
12 slope requirements for the time varying portions;

13 said shape detector producing a shape detection pulse and an associated value for the  
14 second, non-time varying portion each time said predetermined sequence is detected; and

15 a time window for determining whether said shape detection pulse is produced at a  
16 predetermined rate expected for the series of synchronization pulses; and

17 a voltage window for determining whether the average value of one of said second time-  
18 varying portions is substantially lower or the same as, but higher than the lower DC value  
19 detected within the time-equivalent of a segment of video; and

20 an evaluator responsive to the produced shape detection pulses and said associated values  
21 of said second, non-time varying portions for determining whether one of said associated values  
22 of said produced second, non-time varying portions is substantially higher, lower, or the same as  
23 a reference value derived from a previous segment of the input signal.

1 21. (Cancelled)

1 22. (Currently Amended) A method for detection of a synchronization pulse from an input  
2 signal having a plurality of non-synchronization pulses, comprising:

3           determining time-varying properties of the input signal having the synchronization pulse;  
4    and  
5           detecting, from said determined, time-varying properties of the input signal the presence  
6    of the synchronization pulse; and  
7           determining whether the average value of one of said time-varying portions is  
8    substantially lower or the same as, but higher than the lower DC value detected within the time-  
9    equivalent of a segment of video.

1    23. (Currently Amended) A method for detection of a synchronization pulse from an input  
2    signal having a plurality of non-synchronization pulses, comprising:

3           determining time-varying slopes of an input signal having the synchronization pulse;  
4           comparing the determined time-varying slopes with time-varying slopes expected of the  
5    synchronization pulse; and  
6           producing, based on the comparison, an output signal indicative of the detection of the  
7    synchronization pulse;  
8           determining whether said output signal is produced at a predetermined rate expected for  
9    the series of synchronization pulses; and  
10          determining whether the average value of one of said time-varying portions is  
11    substantially lower or the same as, but higher than the lower DC value detected within the time-  
12    equivalent of a segment of video.

1    24. (Currently Amended) A method for detection of a synchronization pulse having a  
2    substantially non-time varying portion and a substantially time-varying portion, the method  
3    comprising:  
4           determining time varying slopes of one of the portions;

5 comparing the determined time-varying slopes with time-varying slopes expected of the  
6 one of the portions of the synchronization pulse; and

7 producing, based on the comparison, an output signal indicative of the detection of the  
8 synchronization pulse;

9 determining whether said output signal is produced at a predetermined rate expected for  
10 the series of synchronization pulses; and

11 determining whether the average value of one of said time-varying portions is  
12 substantially lower or the same as, but higher than the lower DC value detected within the time-  
13 equivalent of a segment of video.

1 25. (Currently Amended) A method for detection of a synchronization pulse within an input  
2 signal, such pulse having a substantially non-time varying portion and a substantially time-  
3 varying portion, the method comprising:

4 determining time-varying slopes of the input signal to identify one of the portions;

5 comparing the determined time-varying slopes with time-varying slopes expected of the  
6 one identified one of the portions of the synchronization pulse; and

7 producing, based on the comparison, an output signal indicative of the detection of the  
8 synchronization pulse;

9 determining whether said output signal is produced at a predetermined rate expected for  
10 the series of synchronization pulses; and

11 determining whether the average value of one of said time-varying portions is  
12 substantially lower or the same as, but higher than the lower DC value detected within the time-  
13 equivalent of a segment of video.

1 26. (Currently Amended) A method for detection of a synchronization pulse within each  
2 of a sequence of input signals having a predetermined rate, such pulse having a  
3 substantially non-time varying portion and a substantially time-varying portion, the  
4 method comprising:

5 determining time-varying slopes of each of the sequence of input signals to

6 identify one of the portions of such one of the input signals;

7 comparing the determined time-varying slopes with time-varying slopes expected  
8 of the one identified one of the portions of the synchronization pulse;

9 producing, based on the comparison, output signals indicative of the detection of  
10 the synchronization pulses of the sequence of input signals; and

11 comparing rate of production of the output pulses with the predetermined rate of  
12 the input signals;

13 determining whether said output pulses are produced at a predetermined rate  
14 expected for the series of synchronization pulses; and

15 determining whether the average value of one of said time-varying portions is  
16 substantially lower or the same as, but higher than the lower DC value detected within the  
17 time-equivalent of a segment of video.

1 27. (Currently Amended) A system for detecting a synchronization pulse within an input  
2 signal, such synchronization pulse having a substantially non-time varying portion  
3 followed by a substantially time-varying portion, the system comprising:

a waveform characteristic detector for producing a detection signal in response to a comparison between actual slope variations in the input signal and a predetermined slope criterion representative of one of the portions of the synchronization pulse; and a pulse generator for producing an output pulse in response to the detected signal produced by the waveform characteristic generator

a time window for determining whether said output pulse is produced at a predetermined rate expected for the series of synchronization pulses; and

a voltage window for determining whether the average value of one of said time-varying portions is substantially lower or the same as, but higher than the lower DC value detected within the time-equivalent of a last segment of video.

28. (Currently Amended) A system for detecting a synchronization pulse within an input signal, comprising:

an detector responsive to samples of the input signal for separating substantially an non-time varying portion of the input signal from a substantially time varying portion of the input signal;

a timer for determining a time duration of one of the portions; and

a processor for detecting the synchronization pulse in response to the determined time duration; and

a window mechanism for determining whether the average value of one of said time-varying portion is substantially lower or the same as, but higher than the lower DC value detected within the time-equivalent of a last segment of video.